REMARKS

Based on the above amendments and remarks to follow, reconsideration of this application is respectfully requested.

In the current office action, claims 1, 3-4, 14-15, 18-19 and 21 were rejected under 35 U.S.C. 103 (a) as being unpatentable over Zhong, et al. (US Publication No. 2004/0247034) in view of Clark (US Patent No. 6,142,942). Claims 2, 16 and 17 were rejected under 35 U.S.C. 103 (a) as being unpatentable over Zhong ('034) in view of Clark ('942) and in further view of Maeda et al. (US Patent No. 7,170,615). Claims 5 and 20 were rejected under 35 U.S.C. 103 (a) as being unpatentable over Zhong ('034) in view of Clark ('942) and in further view of Dugan (US Patent No. 7, 162, 098).

Differences between the present invention and the cited art

In the office action, independent claim 1 is rejected under 35 U.S.C 103(a) as being unpatentable over Zhong ('034) in view of Clark ('942).

Independent claim 1 of the present invention has been amended to recite a system for adaptive post-processing of media data in an electronic device. The electronic device comprises one or more post-processing modules and an adaptive mode decision module. The one or more post-processing modules comprise one or more processing modes. The adaptive post-processing of media data is performed by the adaptive mode decision module, which decides a suitable processing mode to be used in each of the one or more post-processing modules. The decision is based on a pre-defined overall complexity of each of one or more combinations of the post-processing modes. The support for this recitation is found at paragraph [0033], lines 9-11 and paragraph [0038] of the present application.

Further, the overall complexity is determined on the basis of input parameters, which are representative of the state of the electronic device. The input

parameters can include remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference. The support for this recitation is found at paragraph [0020], lines 22-24 and paragraph [0024] of the present application.

In contrast, Zhong ('034) (paragraph [0024]) discloses a less intensive memory-access post-processing architecture implementing a filter buffer, a blocking buffer, and a ringing buffer that are serially connected to each other. *However, Zhong ('034) does not disclose combinations of one or more processing modes that are chosen by an adaptive mode decision module on the basis of their respective complexities.* Zhong ('034) merely discloses a post-processing controller to monitor and control the post-processing process using control information corresponding to video data. The control information used by the post-processing controller in Zhong ('034) is limited to: memory addresses of input and output data, decisions regarding: whether a blocking filter, a ringing filter, or both are used in pipeline; whether 1D or 2D filters are involved in the post-processing; whether horizontal or vertical artifacts are removed first in the post-processing and whether de-blocking process is carried out before de-ringing process in the post-processing. On the other hand, *in the present application, the adaptive mode decision module decides a suitable processing mode in each processing module on the basis of pre-defined overall complexities of various combinations of processing modes. The pre-defined overall complexities in turn are based on the input parameters* that are *representative of the state of the electronic device.* The input parameters can include remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference. *Therefore, the post-processing controller disclosed in Zhong ('034) cannot be construed to be same as the adaptive mode decision module disclosed in the present application. Further, parameters used by Zhong ('034) cannot be interpreted to be same as the input parameters disclosed in the present application.*

The examiner concedes that Zhong ('034) does not disclose input parameters being representative of the state of the electronic device and cites Clark ('942) for this limitation.

However, Clark ('942) discloses an ultrasound imaging system and method having an adaptive filter including an adjustable transfer function. The cited portions of Clark ('942) (col 12, lines 25-46) merely disclose a shaping algorithm that modifies coefficients of the transfer function. The shaping algorithm can be triggered based on a variety of parameters, such as an input power level. *However, the present application discloses an adaptive mode decision module that decides a suitable processing mode to be used on the basis of an overall complexity of the processing mode. The overall complexity is based on the input parameters that are representative of the state of the electronic device. In effect, the input parameters are used to determine the suitable processing modes of various processing modules.* The input parameters can include remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference. Therefore, the shaping algorithm disclosed in the adaptive filter of Clark ('942) cannot be construed to imply the adaptive mode decision module disclosed in the present application. The adaptive filter is quite different from the adaptive mode decision module. Although, both the adaptive filter and the adaptive mode decision module takes power level as input, the utility of input parameters in both of them are different. While adaptive filter merely outputs the signals by modifying the co-efficients of the transfer function on the basis of input signals, the adaptive mode decision module of the present application selects a combination of processing modes on the basis of input parameters. The process of selection cannot be construed as a process of modifying the co-efficients of the transfer function.

Therefore, in light of the above discussion, it is respectfully highlighted that independent claim 1 has elements not rendered unpatentable by the publication to

Zhong ('034) in view of Clark ('942). Therefore, we request you to reconsider the independent claim 1.

In light of the above discussion and the changes to the independent claim 1, dependent claim 2, when read in conjunction with independent claim 1 is distinguishable over Zhong ('034) in view of Clark ('942) and in further view of Maeda ('615).

Additionally, dependent claim 3, when read in conjunction with independent claim 1 is distinguishable over Zhong ('034) in view of Clark ('942).

Further, claim 4 of the present invention recites one of the input parameters being processor usage of the electronic device. Processor usage is an indication of the load on the processor. The support for this recitation is found at paragraph [0024] of the present application. The examiner concedes that Zhong ('034) does not disclose input parameters being representative processor usage of the electronic device and cites Clark ('942) for this limitation. *However,* Clark ('942) *merely discloses a controller configured to generate filter parameters based on one or more signal constraints that are input by a user and based on one or more sample signal statistics associated with one or more sample input or output signals.* Nowhere does Clark ('942) teach input parameter being *processor usage* of an electronic device.

Furthermore, dependent claim 5, when read in conjunction with independent claim 1 is distinguishable over Zhong ('034) in view of Clark ('942) and in further view of Dugan ('098).

In order to clearly distinguish the present invention from the cited art, independent claim 14 of the present invention has been amended to recite a computer program product for adaptive post-processing of media data in an electronic device. The adaptive post-processing is performed by obtaining one or more input parameters, which are representative of the state of the electronic device, such as, remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference. Further, a

determination is made of an overall complexity for each combination of processing modes corresponding to the input parameters. Thereafter, the combination of processing modes, with a pre-defined overall complexity, is selected in each of one or more processing modules.

On the contrary, Zhong ('034) merely discloses a Mode Check circuit that determines whether a block of video data lies in the flat or the complex region. *However, determining the region in which a block of video data lies cannot be construed to imply determining an overall complexity of a combination of processing modes to select a suitable combination of processing modes. . Nowhere does Zhong ('034) disclose selecting a suitable processing mode based on a pre-defined overall complexity of one or more combinations of post-processing modes corresponding to input parameters.*

Further, Zhong ('034) does not teach determining an overall complexity corresponding to input parameters, which are representative of the state of the electronic device, such as, remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference.

The examiner concedes that Zhong ('034) does not disclose input parameters being representative of the state of the electronic device and cites Clark ('942) for this limitation.

However, Clark ('942) discloses an ultrasound imaging system and method having an adaptive filter including an adjustable transfer function. The cited portions of Clark ('942) (col 12, lines 25-46) disclose a shaping algorithm that modifies coefficients of the transfer function. The shaping algorithm can be triggered based on a variety of parameters, such as an input power level. *However, the present application discloses deciding a suitable processing mode on the basis of an overall complexity of a combination of processing modes corresponding to input parameters. Further, the input parameters are representative of the state of the electronic device.* Therefore, *in effect, the input parameters are used to determine*

the suitable processing modes of various processing modules. The input parameters can include remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference. This process of selecting a suitable processing mode on the basis of an overall complexity is carried out by an adaptive mode decision module. Following from the discussion above, the shaping algorithm disclosed in the adaptive filter of Clark ('942) cannot be construed to imply the adaptive mode decision module disclosed in the present application. The adaptive filter is quite different from the adaptive mode decision module. Although, both the adaptive filter and the adaptive mode decision module takes power level as input, the utility of input parameters in both of them are different. While adaptive filter merely outputs the signals by modifying the co-efficients of the transfer function on the basis of input signals, the adaptive mode decision module of the present application selects a combination of processing modes on the basis of input parameters. The process of selection cannot be construed as a process of modifying the co-efficients of the transfer function.

Therefore, in the light of the above discussion, it is respectfully highlighted that the independent claim 14 has elements neither anticipated, nor rendered obvious by the publication to Zhong ('034) and Clark ('942). Therefore, we request you to reconsider the independent claim 14.

Further, dependent claims 15-20 are distinguishable in light of their dependency from independent claim 14.

Furthermore, dependent claim 21 has been cancelled without prejudice or disclaimer and therefore, the rejections to dependent claim 21 do not hold.

A new independent claim 22 has been proposed to highlight the features of the present application.

Independent claim 22 of the present application recites a computer program product for adaptive post-processing of media data in an electronic device. The adaptive post-processing is performed by generating a table for relating one or more

processing modes to input parameters. The table is generated by obtaining all combinations of the processing modes such that each combination contains one processing mode from each of the one or more processing modules. Further, the output quality for each combination is obtained and each of the combinations is arranged in an increasing order of their complexities. The combinations that do not give a higher quality when compared with the combinations having lower complexity are eliminated. Furthermore, ranges of input parameter values for each of the combinations are allocated.

Thereafter, input parameters are obtained such that the input parameters represent the state of the electronic device. Further, on the basis of the generated table, a selection is made of a suitable processing mode in each of the post-processing modules with a pre-defined complexity. The support for the given recitation is found at paragraphs [0033], [0034], [0038], FIG. 4 and FIG. 7 of the present application.

None of Zhong ('034), Clark ('942), Maeda ('615) and Dugan ('098) either alone or in combination teach the recitation of independent claim 22.

Zhong ('034) merely discloses a less intensive memory-access post-processing architecture implementing a filter buffer, a blocking buffer, and a ringing buffer that are serially connected to each other. *However, Zhong ('034) does not disclose combinations of one or more processing modes that are chosen by an adaptive mode decision module on the basis of their respective complexities.* Further, Zhong ('034) discloses a post-processing controller to monitor and control the post-processing process using control information corresponding to video data. The control information used by the post-processing controller in Zhong ('034) is limited to: memory addresses of input and output data, decisions regarding: whether a blocking filter, a ringing filter, or both are used in pipeline; whether 1D or 2D filters are involved in the post-processing; whether horizontal or vertical artifacts are removed first in the post-processing and whether de-blocking process is carried out

before de-ringing process in the post-processing. On the other hand, *in the present application, a suitable processing mode in each processing module is selected on the basis of pre-defined overall complexities of various combinations of processing modes. The pre-defined overall complexities in turn are based on the input parameters* that are *representative of the state of the electronic device.* The input parameters can include remaining battery power of the electronic device, processor usage of the processor in the electronic device and user preference.
Furthermore, Zhong ('034) discloses a Mode Check circuit that determines whether a block of video data lies in the flat or the complex region. *However, determining the region in which a block of video data lies does not imply determining an overall complexity of a combination of processing modes to select a suitable combination of processing modes. Nowhere does Zhong ('034) disclose selecting a suitable processing mode based on a pre-defined overall complexity of one or more combinations of post-processing modes corresponding to input parameters.*

Cited art Clark ('942) discloses an ultrasound imaging system and method having an adaptive filter including an adjustable transfer function. A shaping algorithm modifies coefficients of the transfer function. The shaping algorithm can be triggered based on a variety of parameters, such as an input power level. *However,* the shaping algorithm disclosed in the adaptive filter of Clark ('942) cannot be confused with an adaptive mode decision module disclosed in the present application that selects a processing mode on the basis of an overall complexity. The adaptive filter is quite different from the adaptive mode decision module. Although, both the adaptive filter and the adaptive mode decision module takes power level as input, the utility of input parameters in both of them are different. While adaptive filter merely outputs the signals by modifying the co-efficients of the transfer function on the basis of input signals, the adaptive mode decision module of the present application selects a combination of processing modes on the basis of

input parameters. The process of selection cannot be construed as a process of modifying the co-efficients of the transfer function.

Cited art Maeda ('615) discloses an image processing device capable of processing image data completely, from inputting the image data to outputting the image data. Further, Maeda ('615) discloses recovering from various troubles such as a scanner trouble, a transport jam and a printer trouble, when inputting and outputting an image for use in a facsimile machine or in a personal computer, as well as a normal transport jam, while minimizing the increase in the cost of the device.

In order to achieve the above object, a management table is disclosed, which manages the characteristics of each of the image data. The management table comprises an image input table, an image process table and an image output table. The image input table manages information relating to the image data and processing conditions, for each image data inputted through a scanner section, a facsimile board, a printer board, etc. Information contained in the input table includes document ID information, document side information, document size information, scaling factor information, read image number information, input request information, and input completion information.

The image process table manages, for each image data, contents of image processing to be performed with respect to the image data and information relating to the image data which has undergone the image processing. The information contained in the image process table includes image ID information, process information, process ID information, and process completion information.
The image output table manages, for each page, information relating to an output of image data which has been processed. The information contained in the image output table includes output image ID information, sheet side information, print size information, print number information, output request information, output completion information, memory release information, and output ID information.

However, the image processing system disclosed by Maeda ('615) is

nowhere similar to the post-processing system disclosed in the present application. *Nowhere does Maeda ('615) disclose selecting a suitable processing mode based on a pre-defined overall complexity of one or more combinations of post-processing modes corresponding to input parameters.* Further, the table disclosed in the present application is generated by obtaining all combinations of the processing modes such that each combination contains one processing mode from each of the one or more processing modules. Further, the output quality for each combination is obtained and each of the combinations is arranged in an increasing order of their complexities. The combinations that do not give a higher quality when compared with the combinations having lower complexity are eliminated. Furthermore, ranges of input parameter values for each of the combinations are allocated so that when input parameter values are obtained, the generated table can be consulted for determining an overall complexity of the input parameter values. Maeda ('615) does not teach table generation in the manner of the present application and hence, cannot be cited to teach the feature of table generation as recited in independent claim 14 of the present application.

Cited art Dugan ('098) discloses a data collection acceleration method for performing asynchronous and real-time spatial up-sampling and amplitude quantizing for live operations that collect relatively high resolution amplitude data, but only process an amplitude quantized version of the data. Through real-time up-sampling and amplitude quantizing, the data collection acceleration system and method of the present invention effectively increase the scan resolution of a data collection system without upgrading the data collection device and with a minimal decrease in quality of the amplitude quantized image. In the present invention, a signal source's amplitude is sampled at a relatively high resolution by a data collection device that is designed to sample the signal at a relatively low characteristic scan resolution. Further, Dugan ('098) merely discloses establishing a selected spatial up-sample algorithm and a selected amplitude quantizing algorithm